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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Routine Licensing of Large Numbers of Small Antenna Earth Stations Operating in the Ka-Band	)	RM-9005

OPPOSITION OF GTE SERVICE CORPORATION

GTE Service Corporation and its telephone and wireless subsidiaries ("GTE")[1] hereby files its comments in response to the Public Notice issued by the Federal Communications Commission ("FCC" or "Commission") on September 5, 1997.[2] There, the Commission seeks comment on whether frequency sharing can be achieved between Fixed Services and Satellite Service Stations in the 17.7-19.7 GHz band, and on whether blanket licensing procedures are appropriate for the 17.7-20.2 GHz and 27.5-30.0 GHz frequency bands.

GTE holds controlling interests in several Fixed Service licensees. GTE does not believe frequency sharing is workable in the 17.7-19.7 GHz band. GTE is concerned that requiring Fixed Services to share frequencies with FSS services will

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1 GTE's subsidiaries include, but are not limited to, GTE Network Services, GTE Wireless Products and Services, and GTE Communications, Inc.

2 Commission Requests Comment to Refresh Record on Proposals for Blanket Licensing of Satellite Earth Stations Operating in the 17.7-20.2 GHz and 27.5-30.0 GHz Frequency Bands and Sharing Between Fixed Terrestrial and Satellite Services in the 17.7-19.7 GHz Frequency Bands, Public Notice No. 76370, IN Report No. 97-27 (released September 5, 1997) (hereinafter "Public Notice").

drastically impair GTE's ability to expand its network services capabilities in the 17.7-19.7 band for fixed microwave. Should the Commission decide to implement sharing, however, GTE opposes blanket licensing of FSS satellite downlink stations in the 17.7-19.7 GHz band, supports requiring FSS users to take measures to protect FSS earth stations from Fixed Services interference, and believes that technical and operational rules must be developed prior to sharing implementation.

I. Background

On July 22, 1996, the FCC adopted its *First Report and Order and Fourth Notice of Proposed Rulemaking* in its proceeding considering frequency use in the 28 GHz band.[3] There, the FCC, *inter alia*, designated frequencies for downlinks in the Non-Geostationary Satellite Orbit/Fixed Satellite Services ("NGSO/FSS") and Geostationary Satellite Orbit/Fixed Satellite Services ("GSO/FSS"). In particular, the FCC designated the 17.7-18.8 GHz sub-band to the GSO/FSS and Fixed Services as co-primary users, with NGSO/FSS as secondary users; the 18.8-19.3 GHz sub-band to NGSO/FSS and Fixed Services as co-primary, with GSO/FSS as secondary users; and the 19.3-19.7 GHz sub-band to Mobile Satellite Services ("MSS") and Fixed Services as co-primary, with GSO/FSS as secondary.[4]

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[3] Rulemaking to Amend Parts 1, 2, 21, and 25 of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band, to Reallocate the 29.5-30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services, CC Docket No. 92-297, 11 FCC Rcd 19005, released July 22, 1996 (hereinafter "*28 GHz Order*").

[4] *Id.* at 19036-19037.

On December 3, 1996, Lockheed Martin Corporation, AT&T Corp., Hughes Communications, Inc., Loral Space & Communications, Ltd., and GE American Communications, Inc. ("Petitioners") filed a Petition for Rulemaking asking the FCC to revise Part 25 of the Commission's Rules to provide for the routine "blanket" licensing of large numbers of GSO/FSS earth stations operating in the 19.7-20.2 GHz, 28.35-28.6 GHz, and 29.5-30.0 GHz bands.[5] Petitioners argued that blanket licensing of end-user terminals is necessary to support "tens of millions" transceivers they believe will be in use by the year 2007.[6] Petitioners did not ask the FCC to adopt blanket licensing for the 17.7-18.8 GHz band. Petitioners stated that they "recognize that the issues presented [by sharing and blanket licensing] are unique to this band and will affect a broad group."[7] Accordingly, Petitioners asked the FCC to initiate proceedings to address the development of sharing criteria and licensing procedures to offer protection for GSO/FSS and Fixed Services stations operating in the 17.7-18.8 GHz band.[8]

On February 18, 1997, Teledesic Corporation ("Teledesic") filed comments supporting the Petition.[9] Teledesic, however, asked the FCC to simultaneously

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5 Routine Licensing of Large Numbers of Small Antenna Earth Stations Operating in the Ka-Band, Petition for Rulemaking, RM-9005, filed December 23, 1996 (hereinafter "Petition"). Petitioners define "blanket licensing" as the routine licensing of large numbers of small antenna earth stations. Petition at 3.

6 *Id.*

7 *Id.* at 7.

8 *Id.*

9 Routine Licensing of Large Numbers of Small Antenna Earth Stations Operating in the Ka-Band, RM-9005, Comments of Teledesic Corporation, filed February 18, 1997 (hereinafter "Teledesic Comments").

consider adopting blanket licensing procedures in the 17.7-18.8 GHz sub-band that will be used for downlinks. Teledesic argued that downlink earth stations in this sub-band will be widely deployed in FSS systems and that blanket licensing is necessary for administrative ease. Teledesic contended that delaying consideration of blanket licensing for this sub-band would further delay introduction of FSS services.[10]

II. Discussion

A. GTE Holds Essential Fixed Services Licenses in the 17.7-19.7 GHz Band that Must Be Protected

GTE holds or controls more than 80 licenses in the 17.7-19.7 GHz band. These licenses are used primarily to carry telecommunications traffic (voice, video, and data) between customer locations and GTE's network, between network switching locations, between wireless cell sites, and between other points in GTE's networks. 18 GHz Fixed Services are also used for network congestion relief and for temporary emergency service restoration. Microwave links, therefore, are an integral part of GTE's facilities-based communications networks.[11]

The Commission is well aware that communications is experiencing explosive growth. Traditional phone service networks, in addition to voice, now support other services such as data and video and are used by other carriers to provide telecommunications services to the public. Wireless usage also continues to grow rapidly. As a result of this explosive growth in all segments of the telecommunications

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[10] Teledesic Comments at 3-4.

[11] Other licensees rely heavily on 18 GHz Fixed Services to carry video services. Industry wide, there are over 79,000 active 18 GHz licensed paths.

market, service providers must constantly expand and upgrade their networks. To keep up with the demand for network services, GTE expects that its use of existing fixed microwave links will continue to grow and that it will need to add additional fixed microwave facilities in the future.

Any effort by the Commission to allocate fixed microwave frequencies for sharing with other services must consider the effect of sharing on existing fixed microwave users. Indeed, given the growth expectancy of fixed microwave services in network infrastructures, the Commission must make sure that measures taken to facilitate development of services like FSS, do not impede the growth and development of fixed microwave services.

B. FCC Policies and Rules for FSS Should Promote Efficient Spectrum Use

As an initial matter, GTE is concerned that frequencies are being licensed to FSS providers absent a demonstration by the licensee that an immediate or near term need for those frequencies exists. FCC spectrum allocation is based upon the principle of efficient spectrum use. Thus, for example, before GTE can obtain additional fixed microwave service licenses, it must demonstrate to the FCC that it needs the spectrum and that granting the license serves the public interest, convenience, and necessity.[12]

GTE is concerned that frequency allocations have been made for the FSS services based on projected demand supported by little, if any, reliable evidence. While the demand for FSS may eventually reach the projected level, it may not. GTE believes that rather than licensing FSS providers to provide service over huge (500 MHz or

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[12] *See* 47 C.F.R. § 101.701(a).

more) spectrum blocks up front, the Commission should authorize each FSS provider initially for only a portion of the spectrum designated for FSS use. As FSS services come on line and demand grows, and as FSS providers are able to demonstrate a need for larger spectrum blocks, additional spectrum blocks can be licensed. GTE believes that handling FSS spectrum allocation in this manner will promote spectrum efficiency, is consistent with FCC spectrum allocation principles in other services, and may enable the FCC to avoid at least some instances of spectrum sharing.

GTE also believes that FSS providers should be required to conserve the spectrum they are licensed to use. GTE notes that fixed microwave licensees are required to have a minimum transmitter efficiency of 1 bps/Hz.[13] The FCC should require FSS licensees to abide by the same standard.

C. Frequency Sharing Between Fixed and FSS Services Will Not Work in the 17.7-19.7 GHz Band

Fixed Service and FSS are not compatible services and should not be required to share the same frequency block. Fixed satellite earth station receivers have quite good sensitivity and will not tolerate terrestrial microwave in their vicinity.[14] Thus, traditionally, where fixed microwave service share frequencies with FSS earth stations, FCC rules create an exclusion zone around the earth station restricting Fixed Services operation. In the 4/6 GHz C-band, for example, exclusion zones can extend over a 100 mile radius from the earth station.[15] The requirement that fixed microwave licensees

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[13] 47 C.F.R. § 101.141(a)(1).

[14] *See* 47 C.F.R. § 25.251(c).

[15] *See* 47 C.F.R. § 25.251 *et seq.*

design around these exclusion zones has virtually eliminated this frequency band for terrestrial microwave usage.

FSS users plan a broad and uncontrolled deployment of satellite earth stations. Petitioners and Teledesic estimate that by the year 2007, "tens of millions" of Ka-Band transceivers will exist globally.[16] Given these deployment estimates, protective measures implemented for FSS earth stations in the 17.7-19.7 GHz band are likely to eliminate this band for fixed microwave just as occurred in the 4/6 GHz band. While existing fixed microwave links, by virtue of their incumbent status, may be able to continue to operate, exclusion zones created for new FSS earth stations will effectively prevent any new fixed microwave links or expansion of existing links in this band. In light of the measures that must be taken to protect FSS from fixed microwave services, sharing of frequencies between FSS and Fixed Services is not viable.

D. If Sharing Is Implemented, the FCC Should Not Adopt Blanket Licensing Procedures and Should Take Measures to Ensure the Viability of Fixed Services

Although GTE does not believe frequency sharing is viable, if the Commission decides to implement its frequency sharing plan for the 17.7-19.7 GHz band, measures must be taken to curb the effect that proliferation of FSS earth stations will have on Fixed Services. First, blanket licensing should not be permitted. Sharing of frequencies requires licensees in each service to coordinate frequency usage. Blanket licensing must not be allowed because it would preclude frequency coordination. Blanket licensing, as Petitioners and Teledesic suggest, will speed the proliferation of FSS earth

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[16] Petition at 3; Teledesic Comments at 2.

stations. Moreover, under a blanket licensing system, the exact location of these earth stations will not be known. Unless the location of each earth station is known, frequency coordination cannot occur.

Second, if sharing is implemented, the Commission should require FSS licensees to take steps that would allow Fixed Service to operate in close proximity to satellite earth stations. Specifically, certain techniques can be used to limit the interference earth stations receive from terrestrial fixed services. These measures include building barriers around satellite earth stations, using shrouded antennas, limiting minimum look angles, and avoiding certain frequency blocks. If sharing is implemented between FSS and Fixed Services, the FCC must require FSS licensees to employ every possible means of accommodating frequency sharing.

Third, before sharing can be implemented, technical rules and operating criteria must be worked out between the respective services. The National Spectrum Managers Association ("NSMA") and the Telecommunications Industry Association ("TIA") have formed a Joint Working Group that is currently actively considering issues between MSS and Fixed Services. GTE recommends that before the FCC considers implementing its sharing plan, it should defer to this group to develop, where possible, rules and criteria that will better facilitate sharing between FSS and Fixed Services.

III. Conclusion

GTE does not believe frequency sharing is appropriate in the 17.7-19.7 GHz band. GTE is concerned that requiring Fixed Services to share frequencies with FSS services will drastically impair GTE's ability to use the 17.7-19.7 band for fixed microwave. Should the Commission decide to implement sharing, however, GTE opposes blanket licensing of FSS satellite downlink stations in the 17.7-19.7 GHz band, supports requiring FSS users to take measures to protect FSS earth stations from Fixed Services interference, and believes that technical and operational rules must be developed prior to sharing implementation.

Respectfully submitted,

GTE Service Corporation and its telephone and wireless companies

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September 24, 1997

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Certificate of Service

I, Judy R. Quinlan, hereby certify that copies of the foregoing "Opposition of GTE Service Corporation" have been mailed by first class United States mail, postage prepaid, on September 24, 1997 to the parties listed below:

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